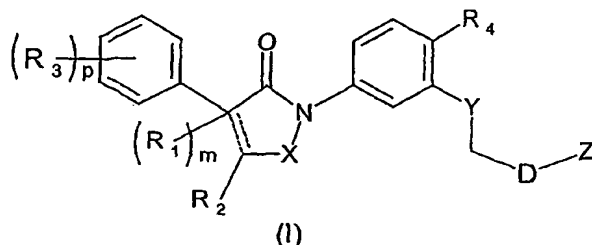


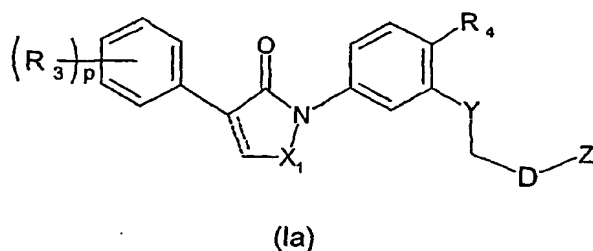
Claims

1. A compound of formula (I) or a pharmaceutically acceptable salt thereof:



wherein:

- 5 R_1 is hydrogen, hydroxy, fluoro, chloro, C_{1-6} alkyl, C_{3-7} cycloalkyl, C_{3-7} cycloalkyloxy, C_{1-6} alkoxy or halo C_{1-6} alkoxy;
 m is 0 when ----- is a double bond and m is 1 when ----- is a single bond;
 R_2 is hydrogen, halogen, cyano, nitro, C_{1-6} alkyl, C_{3-7} cycloalkyl, C_{3-7} cycloalkyloxy, halo C_{1-6} alkyl, C_{1-6} alkoxy, halo C_{1-6} alkoxy, C_{1-6} alkylthio, amino, mono- or
 10 di- C_{1-6} alkylamino or an N-linked 4 to 7 membered heterocyclic group;
 X is $-(CH_2-CH_2)-$, $-(CH=CH)-$, $-(CH_2)_3-$, $-C(CH_3)_2-$, $-(CH=CH-CH_2)-$, $-(CH_2-CH=CH)-$ or a group $-(CHR_5)-$ wherein R_5 is hydrogen, halogen, hydroxy, cyano, nitro, C_{1-6} alkyl, C_{3-7} cycloalkyl, C_{3-7} cycloalkyloxy, halo C_{1-6} alkyl, C_{1-6} alkoxy, halo C_{1-6} alkoxy or C_{1-6} alkylthio;
 15 R_3 is halogen, cyano, C_{1-6} alkyl, C_{3-7} cycloalkyl, C_{3-7} cycloalkyloxy, C_{1-6} alkoxy, C_{1-6} alkylthio, hydroxy, amino, mono- or di- C_{1-6} alkylamino, an N-linked 4 to 7 membered heterocyclic group, nitro, halo C_{1-6} alkyl, halo C_{1-6} alkoxy, aryl, aryl C_{1-6} alkyl, aryl C_{1-6} alkyloxy, aryl C_{1-6} alkylthio or $COOR_6$, $CONR_7R_8$ or COR_9 wherein R_6 , R_7 , R_8 and R_9 are independently hydrogen or C_{1-6} alkyl;
 20 p is 0, 1 or 2 or 3;
 R_4 is hydrogen, halogen, hydroxy, cyano, nitro, C_{1-6} alkyl, C_{1-6} alkanoyl, C_{3-7} cycloalkyl, C_{3-7} cycloalkyloxy, halo C_{1-6} alkyl, C_{1-6} alkoxy, halo C_{1-6} alkoxy, C_{1-6} alkylthio, amino, mono- or di- C_{1-6} alkylamino or an N-linked 4 to 7 membered heterocyclic group;
 Y is oxygen, sulfur, $-CH_2-$ or NR_{10} wherein R_{10} is hydrogen or C_{1-6} alkyl;
 25 D is a single bond, $-CH_2-$, $-(CH_2)_2-$ or $-CH=CH-$; and
 Z is an optionally substituted C-linked 4 to 7 membered heterocyclic group containing at least one nitrogen, an optionally substituted N-linked 4 to 7 membered heterocyclic group, or Z is $-NR_{11}R_{12}$ where R_{11} and R_{12} are independently hydrogen or C_{1-6} alkyl.
- 30 2. A compound as claimed in claim 1, wherein X is $-CH_2-$.
3. A compound as claimed in claim 1 or claim 2, wherein when ----- is a single bond, R_1 is hydrogen, hydroxy or C_{1-6} alkoxy.
- 35 4. A compound as claimed in claim 1 having the following formula (Ia):



wherein R_3 , p , R_4 , Y , D , Z , ----- are as defined in claim 1 and X_1 is $-\text{CH}_2-$ or $-\text{HC}(\text{OH})-$.

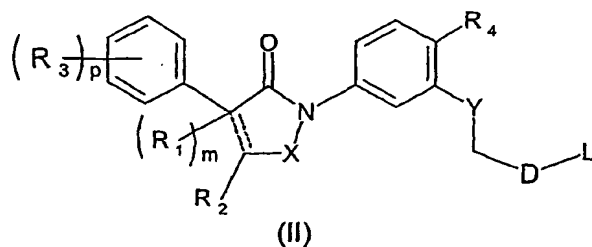
- 5 5. A compound as claimed in any of claims 1-4, wherein p is 1 or 2 and R_3 is/are halogen, particularly chloro or fluoro, attached at the 3 or the 3,4-positions of the phenyl ring.
6. A compound as claimed in any of claims 1-5, wherein R_4 is C_{1-6} alkoxy (particularly methoxy), OCF_3 , halogen or cyano.
7. A compound as claimed in any of claims 1-6, wherein D is $-\text{CH}_2-$.
8. A compound as claimed in any of claims 1-7, wherein Y is oxygen.
9. A compound as claimed in any of claims 1-8, wherein Z is an optionally substituted N-linked 4 to 7 membered heterocyclic group.
10. A compound as claimed in claim 9, wherein Z is piperidyl.
11. A compound as claimed in claim 1 which is:
 - 3-(3,4-Dichloro-phenyl)-3-hydroxy-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-pyrrolidin-2-one
 - 3-(3,4-Dichloro-phenyl)-3-hydroxy-1-[4-methoxy-3-(2-morpholin-4-yl-ethoxy)-phenyl]-pyrrolidin-2-one
 - 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-pyrrolidin-2-one
 - 1-[4-Chloro-3-(2-piperidin-1-yl-ethoxy)-phenyl]-3-(3,4-dichloro-phenyl)-pyrrolidin-2-one
 - 1-[4-Chloro-3-(2-piperidin-1-yl-ethoxy)-phenyl]-3-(3,4-dichloro-phenyl)-3-hydroxy-pyrrolidin-2-one
 - 3-(3,4-Dichloro-phenyl)-1-(4-methoxy-3-[2-(4-methyl-piperidin-1-yl)-ethoxy]-phenyl)-pyrrolidin-2-one
 - 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-1,5-dihydro-pyrrol-2-one
 - 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-(2-morpholin-4-yl-ethoxy)-phenyl]-1,5-dihydro-pyrrol-2-one
 - 1-[4-Chloro-3-(2-piperidin-1-yl-ethoxy)-phenyl]-3-(3,4-dichloro-phenyl)-1,5-dihydro-pyrrol-2-one

- 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-(2-pyrrolidin-1-yl-ethoxy)-phenyl]-1,5-dihydro-pyrrol-2-one
- 3-(3-Fluoro-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-1,5-dihydro-pyrrol-2-one
- 5 3-(3,4-Dichloro-phenyl)-1-(-3-[2-(4,4-difluoro-piperidin-1-yl)-ethoxy]-4-methoxy-phenyl)-1,5-dihydro-pyrrol-2-one
- 3-(3-Fluoro-phenyl)-5-hydroxy-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-pyrrolidin-2-one
- 10 1-[4-Chloro-3-(2-piperidin-1-yl-ethoxy)-phenyl]-3-(3,4-dichloro-phenyl)-5-hydroxy-pyrrolidin-2-one
- 3-(3,4-Dichloro-phenyl)-1-(-3-[2-(4,4-difluoro-piperidin-1-yl)-ethoxy]-4-methoxy-phenyl)-5-hydroxy-pyrrolidin-2-one
- 3-(3-Fluoro-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-pyrrolidin-2-one
- 15 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-(2-pyrrolidin-1-yl-ethoxy)-phenyl]-pyrrolidin-2-one
- 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-3-methyl-pyrrolidin-2-one hydrochloride salt
- 3-(3-Chloro-phenyl)-1-[4-methoxy-3-[2-(4-methyl-piperidin-1-yl)-ethoxy]-phenyl]-1,5-dihydro-pyrrol-2-one hydrochloride salt
- 20 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-3,4-dihydro-1H-pyridin-2-one
- 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-piperidin-2-one
- 25 3-(3,4-Dichloro-phenyl)-1-(4-methoxy-3-[2-(4-methyl-piperidin-1-yl)-ethoxy]-phenyl)-3,4-dihydro-pyrrol-2-one
- 3-(3,4-Dichloro-phenyl)-1-(4-methoxy-3-[2-(4-methyl-piperidin-1-yl)-ethoxy]-phenyl)-4-methyl-1,5-dihydro-pyrrol-2-one
- 3-(4-Chloro-phenyl)-1-(4-methoxy-3-[2-(4-methyl-piperidin-1-yl)-ethoxy]-phenyl)-3,4-dihydro-pyrrol-2-one
- 30 3-(4-Chloro-phenyl)-1-(4-methoxy-3-[2-piperidin-1-yl)-ethoxy]-phenyl)-3,4-dihydro-pyrrol-2-one
- 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-(piperidin-3-ylmethoxy)-phenyl]-pyrrolidin-one
- 35 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-(1-methyl-piperidin-3-ylmethoxy)-phenyl]-pyrrolidin-one
- N*-(4-[3-(3,4-dichlorophenyl)-2-oxo-2,5-dihydro-1H-pyrrol-1-yl]-2-[2-(1-piperidinyl)ethoxy]phenyl)acetamide
- N*-(4-[3-(3,4-dichlorophenyl)-2-oxo-pyrrolidin-1-yl]-2-[2-(1-piperidinyl)ethoxy]phenyl)acetamide
- 40 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-[2-(4-methyl)-piperidin-1-yl-ethoxy]-phenyl]-3-methyl-pyrrolidin-2-one
- 3-(3-Chloro-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-pyrrolidin-2-one
- 45 3-(3-Trifluoromethyl-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-pyrrolidin-2-one
- 3-(3-Trifluoromethyl-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-1,5-dihydro-pyrrol-2-one
- 3-(3-Chloro-phenyl)-5-methoxy-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-pyrrolidin-2-one
- 50 3-(3-Chloro-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-1,5-dihydro-pyrrol-2-one

- 3-(4-Fluoro-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-1,5-dihydro-pyrrol-2-one
 3-(4-Fluoro-phenyl)-1-[4-methoxy-3-(2-piperidin-1-yl-ethoxy)-phenyl]-pyrrolidin-2-one
 5 1-[4-Methoxy-3-[2-(4-methyl-piperidin-1-yl)-ethoxy]-phenyl]-3-(4-methyl-phenyl)-1,5-dihydro-pyrrol-2-one
 1-[4-Methoxy-3-[2-(piperidin-1-yl)-ethoxy]-phenyl]-3-(4-methyl-phenyl)-1,5-dihydro-pyrrol-2-one
 3-(4-Bromo-phenyl)-1-[4-methoxy-3-[2-(4-methyl-piperidin-1-yl)-ethoxy]-phenyl]-1,5-dihydro-pyrrol-2-one
 10 1-[4-Methoxy-3-[2-(4-methyl-piperidin-1-yl)-ethoxy]-phenyl]-3-(4-trifluoromethyl-phenyl)-1,5-dihydro-pyrrol-2-one
 3-(2-Chloro-phenyl)-1-[4-methoxy-3-[2-(4-methyl-piperidin-1-yl)-ethoxy]-phenyl]-1,5-dihydro-pyrrol-2-one
 15 3-(3,4-Dichloro-phenyl)-3-hydroxy-1-[4-methoxy-3-[2-(4-methyl-piperidin-1-yl)-ethoxy]-phenyl]-pyrrolidin-2-one
 3-(3,4-Dichloro-phenyl)-3-fluoro-1-[4-methoxy-3-[2-(4-methyl-piperidin-1-yl)-ethoxy]-phenyl]-pyrrolidin-2-one
 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-[(1-methyl-pyrrolidin-2-yl)-methoxy]-phenyl]-pyrrolidin-2-one
 20 3-(3,4-Dichloro-phenyl)-1-[4-methoxy-3-[(1-methyl-pyrrolidin-2-yl)-methoxy]-phenyl]-3,4-dihydro-pyrrol-2-one
 or a pharmaceutically acceptable salt thereof.

- 25 12. A process for the preparation of a compound as defined in any of claims 1-11, which process comprises:

(a) reacting a compound of formula (II):



- 30 wherein R_1 , R_2 , R_3 , R_4 , m , p , X , Y and D are as defined for formula (I), and L is a leaving group, with a compound of formula (III):

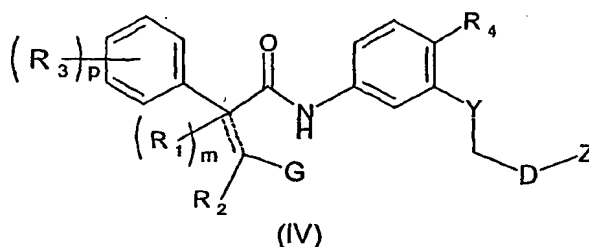
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Z-H

(III)

wherein Z is as defined for formula (I); or

- 5 (b) cyclising a compound of formula (IV):



wherein R_1 , R_2 , m , R_3 , p , R_4 , Y , D , Z and --- are as defined for formula (I) and G is a group ---X=CH_2 , wherein X is as defined for formula (I), dehydrogenated as required;

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optionally followed by:

- removing any protecting groups; and/or
- converting a compound of formula (I) into another compound of formula (I); and/or
- forming a pharmaceutically acceptable salt.

15

13. A pharmaceutical composition comprising a compound as defined in any of claims 1-14 and a pharmaceutically acceptable carrier or excipient.

20

14. A process for preparing a pharmaceutical composition as defined in claim 13, the process comprising mixing a compound a compound as defined in any of claims 1-14 and a pharmaceutically acceptable carrier or excipient.

15. A compound as defined in any of claims 1-11 for use as a therapeutic substance.

25

16. A compound as defined in any of claims 1-11 for use in the treatment of a CNS disorder.

17. A compound as defined in any of claims 1-11 for use in the treatment of depression or anxiety.

30

18. A method of treatment of a CNS disorder in a mammal including a human, which comprises administering to the sufferer a therapeutically safe and effective amount of a compound as defined in any of claims 1-11.

19. A method of treatment of depression and/or anxiety in a mammal including a human, which comprises administering to the sufferer a therapeutically safe and effective amount of a compound as defined in any of claims 1-11.

5 20. Use of a compound as defined in any of claims 1-11 in the manufacture of a medicament for use in the treatment of a CNS disorder.

21. The use of a compound as defined in any of claims 1-11 in the manufacture of a medicament for use in the treatment of depression or anxiety.

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